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ABSTRACT

The visual interaction of two strangers in a nonfocused situation (waiting room) was investigated. Amount of visual interaction decreased across time and with the increasing proximity of the interactants. Neither the sex composition of the dyad nor the sex of the looker was a significant source of variance. However, females received more glances than males. In addition, when interaction distance was close, the gaze direction of subjects within opposite-sex dyads was positively related, while for same-sex dyads it was negatively related. Attention was drawn to the differences in the patterns of visual behavior which occur in focused and nonfocused interactions. (Author)

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VISUAL BEHAVIOR IN A NONFOCUSED DYADIC INTERACTION AS A FUNCTION OF SEX AND DISTANCE[1]

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A large number of studies have demonstrated the importance of visual behavior in the mediation of social interactions (e.g., Argyle & Dean, 1965; Exline, 1963; Kendon, 1967). However, experimental investigations have been restricted to the analysis of visual behavior in focused interactions to the exclusion of its role in nonfocused interactions. As viewed by Goffman (1963), focused interactions refer to situations wherein persons agree to sustain a single focus of attention. Nonfocused interaction on the other hand is "concerned with what can be communicated between persons merely by virtue of their presence together in the same social situation (p. 83)." Thus, examples of focused interactions include individuals in conversation or cooperating on a task, whereas, examples of nonfocused interactions include strangers in a waiting room and passersby on a street. There is no apparent reason why the patterns of visual behavior that regularly occur in nonfocused interactions necessarily parallel those which occur in focused interactions. Thus, the purpose of the present experiment was to investigate the gaze direction of two strangers in a nonfocused situation. Three potential determinants of gaze direction were of special interest--the sex of the looker, the sex of the target, and the spatial proximity of the interactants. In addition, the relationships between visual behavior and the personality variables of affiliativeness and social anxiety were considered.

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Research has served to clarify the effects of sex, distance, and personality on visual behavior in focused interaction. Several studies have shown that females typically display more eye contact than males (e.g., Aiello, 1972; Exline, 1963; Exline, Gray & Schuette, 1965; Libby, 1970), and there is more eye contact in same-sex dyads than in opposite-sex dyads (e.g., Aiello, 1972; Argyle & Dean, 1965). Investigations of spatial proximity generally indicate that as the distance between persons decreases, eye contact also decreases (e.g., Aiello, 1972; Argyle & Dean, 1965; Goldberg, Kiesler & Collins, 1969). However, Aiello (1972) did find that while eye contact increased linearly with distance for males, for females eye contact first increased with distance, then decreased. With regard to personality, people who are high in need for affiliation engage in more eye contact than people low in need for affiliation when working on cooperative tasks; however, the reverse is true with regard to competitive tasks (Exline, 1963). Also, D. Watson[3] reports that persons who score high on a measure of social anxiety look at others less than those who score high on a measure of affiliativeness.

It may be the case that one can generalize from the findings of research on focused interactions to the behavior of subjects in a nonfocused situation. However, recognition of the fundamental differences between focused and nonfocused situations suggests that such apriori generalizations may be tenuous and, perhaps, completely misleading. Consequently, no specific hypotheses were formulated.

Method

The major dependent variables were the frequency and total duration of mutual gaze and individual gaze. The major independent variables included type of dyad (male, female, and opposite-sex), sex of looker, sex of target,

spatial proximity (close and far) and time (1st, 2nd, and 3rd minutes of interaction).

Subjects

Forty male and 40 female undergraduate volunteers served as subjects. Subjects were scheduled in pairs, yielding a total of 10 male, 10 female, and 20 opposite-sex dyads. One half of the dyads interacted at the close distance, and the remaining dyads interacted at the far distance. Since the study was concerned with interaction between strangers, subjects who knew one another's names were excluded from the same dyad.

Experimental Setting and Instruments

The experiment was conducted in a 17 x 19 ft. room arranged to resemble a laboratory storage room which also served as a graduate student's office. In the close condition there was a small table in the center of the room, and in the far condition there was a large table. In each condition, two chairs were placed on opposite sides of the table, so that in the close condition two feet of table surface separated the subjects, and in the far condition seven feet of table surface separated the subjects. Directly behind each chair was a concealed observation booth. The first booth consisted of a 5 x 4 x 3 ft. wooden box on top of which was placed a 3 x 3 x 2 ft. box designed to resemble a large learning apparatus. An observer sat inside this structure. Circular, plexiglass apertures enabled the observer to view the subject facing him while preventing the subject from seeing the observer. The second observation booth consisted of two tall bookcases placed side-by-side. The observer sat behind the bookcases and viewed the other subject through small openings between the books. It was believed that concealing the observers in the above fashion would serve to alleviate suspicions which may have been aroused by the

traditional one-way mirror, and, therefore, insure a more natural pattern of visual behavior.

The measure of affiliation consisted of 20 items taken from Mehrabian's (1970) affiliative tendency scale. According to Mehrabian, "the scale measures "an individual's general expectation of the positive reinforcing quality of others (p. 417)."

The measure of social anxiety was Watson and Friend's (1969) social avoidance and distress scale. Social avoidance is defined by Watson and Friend as "avoiding being with, talking to, or escaping from others for any reason (p. 449)." Social distress is defined as "the reported experience of a negative emotion, such as being upset, distressed, tense or anxious in social interactions (p. 449)."

Procedure

When solicited, subjects were asked to participate in a study involving the "personality correlated of audio discrimination." Members of a dyad were scheduled to arrive at separate meeting places in order to prevent them from interacting with each other prior to the experimental session.

Three male experimenters were used. Experimenter I met the first subject and escorted him to a door which opened into a short hallway. Through a window in the door, it was possible for them to see an "occupied" light flashing above a laboratory door at the opposite end of the hall and experimenter 2 who was standing in the hallway. Experimenter I informed the subject that apparently some subjects were still being tested, so he would have to wait a few minutes in a room next to the laboratory. Experimenter I emphasized that since the audio discrimination experiment was taking place in the adjacent

room, it was necessary that the subject refrain from moving around the room and making noise while wiating. The subject then was escorted into the waiting room and seated in the chair facing the open doorway. This position enabled the subject and experimenter 2 (in hallway) to see each other, thus reducing the degree of invasion of privacy on the part of the concealed observers during the interval when experimenter 1 left to greet the second subject and his return.

The same procedure was followed with the second subject as with the first. Upon seating the second subject in the chair opposite the first subject, experimenter 1 closed the door and quietly repeated the request for silence. He then remained in the room, sitting at a desk with his back to the subjects.

For the 20 opposite-sex pairs, experimenter 1 alternated bringing a male and a female subject first into the waiting room. Therefore, observers 1 and 2 were able to record the visual behavior of the same number of males and females.

As soon as experimenter 1 stopped talking, the observers began recording the subjects' visual behavior. Each observer used a hand switch which activated the pens of an Esterline-Angus multipen recorder. Each observer depressed the switch when he judged that the subject facing him was glancing at the face region of his coactor and maintained the switch in the depressed position until the subject looked away. This procedure allowed for the simultaneous recording of both the frequency and duration of looking. The observers recorded the visual behavior of the subjects for a three-minute period. During this time, experimenter 1 rated the physical attractiveness of each subject on a seven point scale ranging from "very much below average" to "very much above average" in physical attractiveness.

At the end of the period of observation, experimenter 2 entered the room and asked both subjects to accompany him to a second room. Upon their arrival, the subjects were introduced to experimenter 3. Experimenter 3 explained that since the study was concerned with the personality correlates of audio discrimination, each subject would complete a short questionnaire while waiting to be tested. The subjects were given a booklet containing the affiliative tendency scale and the social avoidance and distress scale. While they were completing the questionnaire, experimenter 3 rated the physical attractiveness of each subject.

After the subjects completed the personality scales, the purpose of the experiment was explained to them. The experimenter apologized for the use of deception, and assured the subjects that other means of conducting the research had been considered, but that the use of deception had been deemed necessary.

Results and Discussion

Preliminary Analyses

In order to estimate inter-observer reliability of judgements of gaze direction, data were collected on 12 additional subjects, each of whom was seated opposite a male confederate for a three-minute interval. Three subjects of each sex were observed by both observers (from one of the observation booths) at the two interaction distances. Using Exline's (1963) method of computation, inter-observer agreement averaged 98.9% and 97.3% for the near and far distances, respectively.

To investigate whether potential differences in the amount of visual behavior across conditions could be due to differences in the physical attractiveness of subjects, a one-way analysis of variance was performed on

the ratings of attractiveness. A subject's attractiveness score was the mean rating given him by experimenters 1 and 3. The results of the analysis of variance indicated the absence of significant differences in attractiveness across experimental groups.

Mutual Gaze

The frequency and total duration of mutual gaze (eye contact) were analyzed by means of two 3 x 2 (type of dyad x distance) analyses of variance. The mean scores for both dependent variables are presented in Table 1. The

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Insert Table 1 about here

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effect of distance was significant with regard to the frequency of mutual gaze ($F = 4.25$, $df = 1/34$, $p < .05$) and marginally significant with regard to the total duration of mutual gaze ($F = 3.07$, $df = 1/34$, $p < .10$). Less mutual gaze occured at the close interaction distance than at the far interaction distance. This finding is consistent with research in focused interactions which indicates less eye contact at closer distances. On the other hand, contrary to evidence pertaining to focused interactions, the sex composition of the dyad was not a significant factor ($F = 1.26$, $df = 2/34$, $p > .20$ for frequency and $F = 1.30$, $df = 2/34$, $p > .20$ for duration).

Perhaps the most noteworthy finding was the little amount of mutual gaze which actually occurred. As shown in Table 1, the largest mean total duration score among the six conditions was 3.0 seconds, which represents only 1.7% of the total interaction time. Eye contact in focused interactions, however, has been shown to occupy between 3% and 7.5% of the total interaction time with naive subject combinations (Exline, 1963), and between 30% and 75%

of the total interaction time with confederate-subject combinations in which the confederate typically gazes at the subject throughout the interaction (Argyle & Dean, 1965). The fact that subjects in the present study engaged in so little mutual gaze suggests the high degree of intimacy which such behavior signifies in nonfocused interactions relative to focused interactions.

Individual Gaze

Two 2 x 2 x 2 x 3 repeated measures analyses of variance were performed on the frequency and total duration of individual (one-way) glances. The factors included sex of looker, sex of target, distance, and time. The mean scores for both dependent variables appear in Table 2. For the frequency

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Insert Table 2 about here

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of glances, the effects of target ($F = 5.84$, $df = 1/72$, $p < .05$), distance ($F = 11.99$, $df = 1/72$, $p < .01$), time ($F = 42.11$, $df = 2/144$, $p < .001$), and the distance x time interaction ($F = 4.91$, $df = 2/144$, p .01) were significant sources of variance. For the total duration of glances, the effects of distance ($F = 8.33$, $df = 1/72$, $p < .01$), time ($F = 20.52$, $df = 2/144$, $p < .001$), and the looker x distance x time interaction ($F = 3.34$, $df = 2/144$, $p < .05$) were significant. Contrary to the findings in focused interactions, the sex of the looker was a nonsignificant source of variance ($F < 1$ for frequency and $F = 1.46$, $df = 1/72$, $p > .20$ for duation).

The effect of target on the frequency of glances can be seen in Table 2--female subjects received significantly more glances than male subjects. As Table 2 also indicates, the trend for total duration of glances was in the same direction. These results suggest that the normative restrictions

governing looking among strangers are more stringent when the other person is male than when the other person is female. Males seldom gaze at other males because of the unfavorable connotations such behavior is likely to carry with it, e.g., homosexual gaze. Similarily, unnecessary glances toward males on the part of females are culturally tabooed as a sign of sexual intentions. On the other hand, we expect males to look at members of the opposite sex and are relatively tolerant of gaze between females.

With regard to main effects of distance and time, subjects engaged in less visual behavior at the close interaction distance than at the far interaction distance, and the amount of visual behavior decreased from the first to the third minute of interaction. Analysis of simple effects of the distance x time interaction for the frequency of glances revealed that the differences in the amount of looking between the far distance and close distance was more significant during the first minute of interaction ($F = 23.10$, $df = 1/147$, $p < .001$) than during the second ($F = 4.34$, $df = 1/147$, $p < .05$) and third minute of interaction ($F = 4.52$, $df = 1/147$, $p < .05$). In addition, Newman-Keuls tests revealed that for both interaction distances significantly more glances occurred during the first minute of interaction than during the second ($p < .01$) and third minutes ($p < .01$); whereas, there was no significant differences between the second and third minutes. The inverse relationship between spatial proximity and amount of individual gaze is consistent with the findings obtained in focused interactions.

Two 3 x 2 x 3 (type of dyad x distance x time) analyses of variance were performed to investigate the frequency and total duration of glances occurring within each type of dyad. Again, for both frequency and duration visual behavior was greater at the far interaction distance ($F = 11.66$, $df = 1/34$,

$p < .01$ and $F = 8.10$, $df = 1/34$, $p < .01$, respectively) and decreased over time ($F = 37.15$, $df = 2/68$, $p < .01$ and $F = 17.71$, $df = 2/68$, $p < .01$, respectively). However, type of dyad was not a significant factor--male, female, and opposite-sex dyads did not differ in either the frequency or total duration of glances.

Interrelationship of Individual Gaze

In order to investigate the relationship between the gaze direction of subjects within each dyad, intraclass correlations (see Snedecor & Cochran, 1967) were computed for the frequency and total duration of glances. The correlations are presented in Table 3. As Table 3 indicates, while none of

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Insert Table 3 about here

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the correlations at the far distance attained significance, 5 of 6 correlations at the close distance were significant. The gaze direction of subjects within opposite-sex dyads was positively related (i.e., as A looked more, B looked more), whereas within same-sex dyads it tended to be negatively related (i.e., as A looked more, B looked less).

It is suggested that during interaction between persons of the same sex, the gaze of one is perceived by the other as a challenge to his status within the relationship. A dominance heirarchy may emerge wherein the more submissive person decreases the amount of his looking. Strongman and Champness (1968) have demonstrated the operation of dominance hierarchies in gaze direction between pairs of subjects conversing across a table. The present correlations also suggest a stronger dominance relationship in the male dyads than in the female dyads. On the other hand, when a dyad consisted of a male and a female, their looking was mutually reinforcing. Apparently, the gaze of the other

person was perceived as an indication of interest and/or approval, and, as such, encouraged return looking. The reason for the lack of a significant relationship between the visual behavior of subjects in the far condition is not immediately clear. Perhaps, the distance was too great for subjects to affectively appreciate the gaze of their coactor.

Personality Factors

A series of Pearson product-moment correlations was computed in order to investigate the relationship between gaze direction and affiliative tendency and social anxiety. Contrary to the findings reported in focused interactions, none of the correlations proved significant. The absence of significant correlations, plus the interrelationship of gaze direction, raise the question as to the extent to which the variability in the amount one looks at his coactor in a nonfocused situation reflects stable individual differences. It appears that when the interaction is nonfocused, how much A looks at B depends primarily upon factors specific to the dyad he is in.

Attractiveness of Target

Product-moment correlations also were used to analyse the relationship between the attractiveness of the subject and both the number and total duration of glances which he received. As Table 4 reveals, there tended to be a positive relationship between the subject's rating on physical attractiveness and the number and duration of glances he received from a member of the

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Insert Table 4 about here

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opposite-sex. There was no evidence for a significant relationship between the attractiveness of a subject and the amount he was looked at by a member of

his own sex. The results are in accord with the popular assumption that a person tends to look more at an attractive member of the opposite sex than at an unattractive member. Moreover, it seems that the physical attractiveness of a member of one's own sex had a negligible effect on an individual's visual behavior.

While the results of the present study indicate some similarity in the patterns of visual behavior that occur in focused and nonfocused interactions (e.g., the effect of spatial proximity), a number of differences also are evident. For instance, in contrast to focused interactions, relatively little mutual gaze occurred in the present nonfocused situation, and there were no significant effects due to the sex of the looker or to personality factors.

Thus, Goffman's distinction between focused and nonfocused interactions is a viable one. The qualitative differences between the two situations are such that when two persons come together, the information communicated by the interplay of their eyes may differ from one situation to the other. For example, one characteristic of nonfocused interactions discussed by Goffman (1963) is "civil inattention," wherein an individual gives visual notice to another person in order to acknowledge his presence, but then immediately shifts his gaze away from him in order to demonstrate that he isn't an object of special attention. Thus, the ritual of civil inattention may account, in part, for the relatively little amount of visual interaction that occurred in the present study. Further research should be directed toward delineating the differences between focused and nonfocused interactions.

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Footnotes

[1]This article is based in part on a M.A. thesis completed by the first author at the University of Windsor under the supervision of the second author. The authors wish to express their appreciation to Lois Coutts, Donald Gill, Rose Anne Maracle, and Joanne Martin for their assistance in the collection of data and to William Garrett, William Libby, Jr., Henry Minton, and Meyer Starr for their helpful comments in the preparation of the manuscript.

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TABLE 1

Mean Frequency and Total Duration of Mutual Gaze for Type of Dyad and Distance

	Frequency		Duration[a]	
	close	far	close	far
Male dyad	0.40	2.19	0.25	2.38
Female dyad	2.00	3.59	2.31	3.00
Opposite-sex dyad	1.09	2.29	1.06	1.81

[a]Figures designate duration in seconds

TABLE 2

Mean Frequency and Total Duration of Glances for Sex of Looker, Sex of Target, Distance, and Time

			Frequency			Duration[a]		
			1st min.	2nd min	3rd min	1st min	2nd min	3rd min
Male Looker	Male target	close	2.39	1.70	1.20	2.13	1.38	1.00
		far	5.29	2.00	2.09	7.63	1.94	2.81
	Female target	close	3.39	1.80	1.00	3.19	3.06	1.56
		far	7.50	3.59	2.79	6.88	4.19	3.63
Female Looker	Male target	close	2.59	1.40	0.90	4.13	1.81	1.13
		far	4.29	2.69	2.00	5.31	5.13	2.69
	Female target	close	4.00	2.79	2.19	6.25	3.50	2.69
		far	6.59	4.29	3.39	7.38	5.13	3.75

[a]Figures designate duration in seconds

TABLE 3

Intraclass Correlations for Frequency and Total Duration of Glances within Each Type of Dyad

Dyad[a]	Frequency		Duration	
	Close	Far	Close	Far
Male (N = 20)	-.66**	+.10	-.59**	+.17
Female (N = 20)	-.47*	+.07	-.31	+.37
Opposite-sex (N = 40)	+.38*	-.04	+.43**	-.19

[a]For rationale underlying the size of N's see Snedecor and Cochran (1967).

* $p < .05$
** $p < .01$

TABLE 4

Correlations between the Attractiveness of the Target and the Frequency and the Total Duration of Glances

	Frequency		Duration	
	Male Target	Female Target	Male Target	Female Target
Male looker	-.01	.43*	.00	.48**
Female looker	.38*	.22	.27	.20

Note.--For each correlation N = 20.

* $p < .10$
** $p < .05$